Medical School Hotline

Integrating Ecohealth in the School of Medicine

Bruce A. Wilcox PhD,
Chair/Professor, Division of Ecology and Health
John A. Burns School of Medicine

Achieving the John A. Burns School of Medicine's vision to become the U.S.'s best medical school that addresses the needs of Asia-Pacific region has involved a number of initiatives, in addition to the construction of a new campus in Kaka'ako. Among these has been the establishment of a new research and education unit that links environmental resources and health, particularly as mediated by the unique socio-cultural and natural environments of the Pacific Island ecosystems. First established as the Division of Ecology and Health, the program currently is being integrated with the newly reorganized Department of Tropical Medicine and Microbiology and the Asia-Pacific Institute for Tropical Medicine and Infectious Disease (APITMID). Since its founding in 2001, the 'Ecohealth' program has focused on community health by using a participatory action research (PAR) approach, conducting and promoting research and curriculum development based on integration of ecological and health sciences, and contributing core faculty for APITMID's Pacific Center for Infectious Disease Ecology. In addition, the program has developed and leads an international consortium that fosters ecohealth research and curriculum development in medical and other professional schools. Finally, the consortium has initiated a new international peer reviewed journal, "EcoHealth". (www.ecohealth.net) published by Springer LLC, New York.

An early achievement of the consortium and a predecessor organization, the International Society for Ecosystem Health, has been the establishment of a working group, Ecosystem Health in Professional Curricula. Participants represented institutions in Canada, Australia, as well as the U.S. whose goal was to engage in international, interdisciplinary dialogue, and share information and experiences in developing ecohealth curricula within medical, public health, and veterinary schools. The deliberations of the working group will soon appear in a special issue of "EcoHealth" (Vol. 1, Issue 3 (Dec. 2004) included is an article titled "Integrating ecohealth into a medical school curriculum: a vision of the future at the University of Hawaii John A. Burns School of Medicine" by this author and Dr. Richard Kasuya. Plans and early achievements in integrating ecohealth in JABSOM's medical curriculum are reported.

The imperative for incorporating ecohealth within the curricula for the health professions is derived from four major areas of concern. These include the effects of global change on human health in general; the interrelated dynamics involving changes in human population and movement, pathogens, parasites, and pollutants; the interaction of health with the environment and economic development; and, the need for a better understanding and management of these related ecosystem and human health challenges across local, regional and global scales.

'Ecohealth' encompasses the transdisciplinary concepts and problem-solving required to address the above issues that prompt researchers and educators in human and animal medicine, public health, and the ecological sciences to work collaboratively (Wilcox et. al., 2004). As the article describes, the medical literature, analysis of JABSOM's evolving curriculum, as well as work with colleagues participating in the Ecosystem Health in the Professional Curriculum project advocate strongly the need for incorporating ecohealth in medical training.

There is support among medical educators, health scientists and practitioners of the need for interdisciplinary training to address health and disease in a larger societal or environmental context. This interest is in tandem with an increased integration of health concepts and issues of societal well-being. Since the first explicit use of an ecological model in medicine, Koch's Germ Theory that relates host and agent via the environment, there has been a continuous evolution of health models toward an ecological perspective that places humans in an ecosystem context (Van Leeuwen et. al., 1999). Added has been the consideration of global and regional ecosystem degradation and its impacts on human well-being (McMichael, 2001). This expansion of the health model has increased research and elucidation that links ecosystem and human health.

Given the need and opportunity at JABSOM, and particularly the unique cultural and ecological circumstances of the region, there are four areas that are integral to an ecohealth curriculum.

- Community Health links family health, local culture, and ecological health that combines elements of environmental health and natural resources management. A participatory, action-oriented model is used to address root causes of health problems.

- Ecosystems and Health addresses the unique character of Hawaiian culture and communities that stem from traditional cultural values and perceptions related to, among other things, the traditional ahupua'a (system of land division and resource management).

- Human Ecology, Traditional Knowledge and Health encompasses contemporary health issues based on the rich heritage of traditional Hawaiian healing knowledge and practice, as well as indigenous health and natural resource management systems in general.

- Global Environmental Change and Human Health considers the effects of global environmental change on human health in the Asia-Pacific region, with a particular focus on Hawaii and other Pacific Islands.

Given JABSOM's structure and educational philosophy, the strategy for enhancing the curriculum employing ecohealth will involve a longitudinal, integrative approach that spans the four-year curricular experience and includes a variety of required and elective educational opportunities. Introduction of structural changes into the curriculum will require approval by a curriculum committee. Some changes have been approved and are underway, such as a new Basic Science Foundation course, that includes an introductory ecohealth component.

In addition, the JABSOM curriculum, Problem Based Learning (PBL) and the case tutorial setting, provides an opportunity for introducing ecohealth concepts into selected cases as well. This strategy allows for integration into materials with related clinical, basic science, behavioral and population issues.

While independent study via PBL and large-group didactic sessions are key components of the curriculum at JABSOM, actual community-based experiences are critical for students to see the practicality and meaningfulness of ecohealth. The Ecohealth program thus mentors and supports first-year students interested in meeting their research and community medicine objectives.

In summary, as ecology and health are inseparably linked. A progressive and meaningful medical education requires integration in medical training of biological ecology as it relates to humans as an organism. This provides students the conceptual and factual foundation for understanding the relationship between the human health and the environment. This is most meaningfully understood using an ecosystem approach that examines the cross-scale interplay -- from individual organisms to the total biotic–abiotic environmental complex (biosphere) -- of environmental stressors and resources, and interspecies interactions. This perspective aligns with the positive concept of health (World Health Organization 1986) now generally accepted, though not always sufficiently stressed in medical curricula.

The interrelated set of ideas, models, concepts, theories, and principles at the interface of ecology and health will facilitate understanding not only of disease etiology but also define health. This understanding is essential for all health advocates.

References

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